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Towards fusion rules for permutation extensions of modular tensor categories. Preliminary report.

Although G -extensions of modular tensor categories \mathcal{C} are classified by the work of Etingof, Nikshych, and Ostrik, this classification doesn't yield explicit constructions of G -crossed fusion, associativity, and braiding.

One would expect that particularly simple examples of G -extensions are permutation extensions, where $G = S_n$ acts on the Deligne product of modular tensor categories $\mathcal{C}^{\boxtimes n}$. However, even in this case it was only recently shown by Gannon and Jones that these extensions exist.

I will share some recent progress on the structure of fusion rules for permutation extensions. This talk is based on work in progress joint with Eric Samperton. (Received September 24, 2018)